

# **PHASE I ENVIRONMENTAL SITE ASSESSMENT**

**Former Rockford Watch Factory  
325 South Madison Street  
Rockford, Illinois 61104**

**Project No.: 14-073**

**July 14, 2014**

**FEHR GRAHAM**  
ENGINEERING & ENVIRONMENTAL

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**Rockford, Illinois 61104**

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## 8.0 FINDINGS

The intent of this section is to identify environmental conditions that may be known or suspect RECs, Controlled RECs (CRECs), Historical RECs (HRECs), and *de minimis* conditions identified on the Property and surrounding properties. In addition, this section includes any data gaps that affected the ability of the Environmental Professional to identify potential RECs. Data gaps may be a result of a data failure with the historical review or other limitations encountered that prevented the Environmental Professional from evaluating the current and historical uses of the Property, or in some cases the surrounding properties. Please refer to Section 9.0 for the Environmental Professional's opinion of the findings and data gaps and whether or not the findings are deemed RECs in connection with the Property.

### 8.1 Property

#### 8.1.1 Records Review

- The Property is identified in the RCRA-NonGen and FINDS databases by the EDR regulatory report:
  - ♦ RCRA-NonGen: Rockford Linear Actuation, Inc.
  - ♦ RCRA-NonGen: Barnes WF and John Co.
  - ♦ FINDS: Barnes WF and John Company
- The Property was occupied by the Rockford Watch Company from approximately 1876 - 1917. An oil room and machining, plating, polishing, and printing operations are depicted in the structure. An oil house is depicted south of the vacated Grove Street from 1887 - 1897 [city directories, Sanborn maps, historical photographs, online sources].
- A lumber yard is depicted in the northwest section of the Property, along the train tracks, in 1913 [Sanborn maps].
- The Property was occupied by the Rockford High School/Board of Education, with onsite industrial and manufacturing operations, from approximately 1918 - 1952. A Machine shop, foundry, printing, and a pipe shop are depicted [city directories, Sanborn maps, historical photographs].
- The Property was occupied by WF & John Barnes and/or Babcock & Wilcox from approximately 1952 - 1983 ("Babcock & Wilcox nuclear core structurals" is listed in the 1983 directory). Areas depicted include machine shops and foundry [city directories, Sanborn maps, historical photographs, online sources].

- WF & John Barnes, and then Babcock and Wilcox in 1963, moved into the design and manufacture of specialized equipment to meet the requirements of post-war atomic energy installations and medical applications. The company also supplied components and core structurals for nuclear reactors [city directories, Sanborn maps, online sources].
- A boiler room was constructed on the northwest section of the Property, on the west side of the structure in approximately 1976 [historical photographs].
- Past owners of the Property include: Ingersoll Milling Machine Company, Acme Precision Products, Babcock & Wilcox Company, WF & John Barnes Company, South Water Building Corporation, Board of Education for the School District of the City of Rockford, and Rockford Lumber & Fuel Co [Title Records review].
- Historical records from Ingersoll International Rockford, IL (plan dated April 1994) depict an incinerator on the northwest section of the south parking area.
- Historical records from Ingersoll International Rockford, IL (plan dated April 1994) depict two (2) 15,000-gallon fuel oil tanks “in sand-filled concrete covered enclosure” near the northern Property line, in the area of the vacated Oak Street. The tanks are associated with the boiler house located to the north.
- Historical records from Ingersoll International Rockford, IL indicate two (2) 1,000-gallon acetone tanks at the north end of the assembly bay were removed from the Property in December 1997 and two (2) 15,000-gallon fuel oil tanks by the boiler room were removed in December 1997. The OSFM tank numbers are listed as 5, 6, 7, and 9.
- Historical OSFM UST notification and removal forms filed for Ingersoll International identify tanks 5 and 9 (acetone) and tanks 6 and 7 (heating oil) at the Property. Use is estimated to be from approximately 1970 - 1980. An UST Removal log indicates the four (4) USTs were removed on 12/29/1997 and 1/8/1998. The onsite fire marshal indicates that the USTs did not appear to leak. The acetone tanks appeared to have been near the northwest corner of the current building, east of the overhead door.
- The northeast addition to the Property structure was demolished prior to 1998 [aerial photographs].
- A prior Phase I ESA identified numerous RECs related to the historical manufacturing operations at the Property. The Phase I ESA also identified the four (4) removed USTs on the Property and determined they were not RECs based on the review of a report provided by Ingersoll Milling Machine Company documenting the UST removal and soil sample analytical results.
- A hydraulic equipment manufacturer (Abrasive Machining, HLA Inc., Rockford Hydraulic, and Rockford Linear) has occupied the Property from approximately 2001 - 2014 [city directories].

### 8.1.2 Site Reconnaissance

- Rockford Linear Actuation Inc. (RLA), a machine shop with associated offices, currently leases and occupies the southern and western sections of the building.
- An unidentified pipe, resembling a chimney or vent pipe, was observed along the structure's southeast wall near the front, or east section of the building.
- Unidentified circular holes were observed in the driveway/parking pavement along the structure's south wall.
- Piles of fill, consisting of soil and potential construction debris, were observed along the Property's southwestern perimeter, above the adjacent railroad track.
- Oily staining and oily metal debris were observed on the pervious ground surfaces in the exterior waste area and on a storm water drain located partially beneath a hopper.
- Elevated electrical transformers are located directly west of the Property's structure, along the building's west exterior wall.
- An at-grade loading dock area is located at the structure's northwestern corner. Grated drains were observed in the loading dock's exterior. Tracks for a historical railroad spur also enter the loading dock.
- Two (2) passenger elevators and two (2) freight elevators are located in the building. The passenger elevators are cable-driven. The freight elevators may be hydraulic.
- Current and historical manufacturing areas are located mainly in the basement level of the building.
- Much of the wood block floors in the basement appeared to be oil, tar, and/or paint stained, and some areas were buckling away from the floor during the site reconnaissance.
- Significant oil staining on the floor was observed in the eastern region of the basement, in an empty equipment room and near an employee locker room.
- Chemicals used in the basement shop included oil drums and containers; painting equipment, including a spray paint booth, and associated painting chemicals. Superficial floor staining was observed throughout the shop area.
- Small amounts of chemicals, including a spilled container of caustic soda, were observed throughout the basement.

### 8.1.3 Interviews

- Ingersoll Milling Machine Company; Babcock & Wilcox Company; and Acme Precision Products, Inc., are included in the Property's chain of title. [City of Rockford provided information].
- The original section of the building was constructed in approximately 1880. The Property was originally used as a watch factory, then by the school district, then for manufacturing by WF & John Barnes, and then Ingersoll in the 1990s [Owner interview].
- RLA manufactures piston rods and cylinders at the Property. RLA is currently not a RCRA generator [Occupant interview].
- A building permit for a new boiler house was acquired by WF & John Barnes in 1970 [building department records].
- 1970 operations at the facility by W & John Barnes Company included metals lab, nuclear shop, and sheet metals and weld areas [fire department records].
- A temporary diesel AST was permitted for the Property in 1981 for 60 days to fuel a generator; the AST may have been on the west adjacent site [fire department records].

### 8.1.4 Data Gaps

The following limitations and/or were encountered during completion of this report:

- An unidentified pipe was observed along the structure's southeast wall near the front, or east section of the building (as described in the site reconnaissance findings).
- Unidentified circular holes were observed in the driveway/parking pavement along the structure's south wall (as described in the site reconnaissance findings).
- Multiple attempts to re-interview the current owner of the Property were unsuccessful.

## 8.2 Surrounding Properties

### 8.2.1 Records Review

- Numerous sites were identified within the EDR regulatory search radius. The following sites were identified on adjacent sites:

- ♦ RCRA-SQG: Rockford Public Schools District at 201 S. Madison; Ingersoll Milling Machine Company at 301 Water Street.
  - ♦ LUST: Ingersoll Milling Machine Company at 301 Water Street.
  - ♦ UST: Meyer Material Company Rockford Yard at 423 South Madison Street; IL Bell Telephone Company at 416 South Madison Street; Care-a-Van/Winnebago Company Para-transit at 416 South Madison Street; Ingersoll Milling Machine Company at 301 South Water Street.
  - ♦ SRP: Ingersoll Milling Machine Company at 301 Water Street; Ward Pump at 409 South Water Street; Fordam Dam at 505 South Water Street.
  - ♦ US BROWNFIELDS: WF & John Barnes/Ingersoll Milling Machine Company at 301 South Water Street; Ward Pump/Ingersoll Milling Machine at 409 South Water Street.
- The Union Pacific Railroad (formerly the C&NW RR) has been located west and south of the Property since at least 1887 [city directories, Sanborn maps, historical photographs].
  - The north adjacent site was occupied by the Rockford High School and/or the Board of Education from approximately 1887 - 2011 [city directories, Sanborn maps, historical photographs].
  - The south adjacent site was occupied by several milling companies and warehouses from approximately 1887 - 1966 (these include Forest City Aller Mills , JG Chick Milling Co., Rockford Grain & Milling Co., Farmer Whole Company Warehouse, and Barnes WF & John warehouse [city directories, Sanborn maps, historical photographs].
  - A WF & John Barnes Company structure located southwest of the Property is labeled as an “underground structure atomic reactor” in 1966. The structure was constructed between 1939 and 1951 [1966 Sanborn map, historical photographs].
  - The south adjacent site has been occupied by a cement mix plant since approximately 1976 [city directories, historical photographs].
  - The southeast adjacent site at 416 South Madison Street was occupied by IL Bell Telephone Company Plant/warehouse from 1932 - 1986, Care-A-Van/County Para-transit System from 1988 - 1997, and the Salvation Army Social Services from 2001 - 2012 [city directories, Sanborn maps, historical photographs].
  - The west adjacent site was occupied by WF & John Barnes Company and subsidiaries from approximately 1887 - 1966, Midwest Irradiation Center from 1966 - 1971, Ward Pump Company from 1891 - 1927 [city directories, Sanborn maps, historical photographs].

- The northwest adjacent site was occupied by a lumber and fuel company from approximately 1887 - 1966. Coal and lumber sheds are depicted on Sanborn maps, silos are depicted on aerial photographs [Sanborn maps, historical photographs].

#### 8.2.2 Site Reconnaissance

- The active Union Pacific Railroad borders the Property to the west and south.
- Meyer Material Company yard/cement mix plant at 423 South Madison Street is located south of the Property.
- The Former Ingersoll Site at 301 South Water Street is located west of the Property.

#### 8.2.3 Interviews

- Reservations, exceptions, and provisions of “all material determined to be essential to the production of fissionable material to the United States of America...” were recorded on April 8, 1953, within the deed for lots 1 to 5 of Block F (the west and southwest adjacent property). [User provided information].

#### 8.2.4 Data Gaps

- No significant data gaps on adjacent properties were found.

## 9.0 OPINIONS

The intent of this section of the report is to allow the Environmental Professional to provide the rationale used to formulate opinions as to whether a known or suspect environmental condition identified in Section 8.0, Findings, is a current Recognized Environmental Condition (REC). This section also provides an opinion as to the significance of the previously identified data gaps and if they are to be considered RECs.

Section 8.1.2.1 of ASTM E 1527-05 allows for the reduction of the approximate minimum search distance of all standard environmental record sources, except for Federal NPL and Federal RCRA TSD sites, when considering the following factors:

1. The density (for example, urban, rural, or suburban) of the setting in which the Property is located.
2. The distance that the hazardous substances or petroleum products are likely to migrate based on local, geologic, or hydrogeologic conditions.
3. The Property type.
4. Existing or past uses of surrounding properties.
5. Other reasonable factors.

Based on one or more of the above listed factors, all of the surrounding sites identified in the EDR report may be excluded from further consideration as RECs, with the exception of the UST site addressed at 416 South Madison Street and the RCRA-SQG, LUST, UST, SRP, and US Brownfields sites at 301 South Water Street, which merit further discussion below. Due to the west-southwesterly direction of groundwater flow towards the Rock River, the EDR findings and other findings identified in Section 8.2 of this report on the north, west, and south adjacent sites are not considered RECs. Any potential subsurface contamination from these sites is not anticipated to migrate to the Property, but toward the Rock River.

The EDR report identifies the southeastern adjacent site at 416 South Madison Street as historically using four (4) gasoline USTs while it was operated by IL Bell Telephone Company and Winnebago County Para-transit. At least two (2) of the tanks are listed as removed, the other two (2) are exempt from OSFM registration as they were installed and used prior to 1974. The 416 South Madison Street site is directly east and adjacent to the southeast section of the Property. As a result of the Property being located in the anticipated down-gradient



direction of groundwater flow from 416 South Madison Street, the historical use of USTs at 416 South Madison Street is viewed as a REC to the Property.

The western adjacent site at 301 South Water Street is occupied by the Former Ingersoll Site, consisting of the former Ward Pump and former Ingersoll Milling Machine. The site is enrolled in the IEPA Site Remediation Program (SRP). Comprehensive assessment and cleanup activities are currently underway at the site in order to achieve a No Further Remediation (NFR) letter from the IEPA. Completed remedial activities include soil removal for PCB and lead impacts. Free phase cutting oil under the building was also removed using enhanced fluid recovery methods. Contamination from the Water Street site is moving toward the river, and not up-gradient to the Property. Due to current cleanup activities at the site, there is no evidence of a current material threat of release from the site that would impact the Property. As such, this site should not present a readily apparent environmental concern in connection with the Property; therefore, should not present a REC in connection with the Property.

The Union Pacific Railroad (formerly the Chicago and North Western Railroad) has been located along the Property's southern and western perimeters since the late 1800s. Soil and groundwater contamination may result along railroad tracks from unreported chemical spills, ongoing tie treatments, and herbicide and diesel applications to keep tracks clear of vegetation. Surface soils may be contaminated from diesel spills, emissions, and potential chlorinated solvents used to quickly wash parts and engines. A lumber yard was previously located along the tracks near the northwest boundary of the Property from approximately 1887 - 1966. The likelihood of shallow soil contamination from idling engines and loading/unloading activities on the north section of the Property near the tracks is increased. A rail siding or spur was also observed on the Property. The historical and current location of a railroad line along the Property's southern and western perimeters is considered a REC.

A WF & John Barnes Company structure located southwest of the Property is labeled as an "underground structure atomic reactor" in the 1966 Sanborn map. The structure was constructed between 1939 and 1951. City directories identify Midwest Irradiation Center at 301 South Water Street from approximately 1966 - 1971. Reservations, exceptions, and previsions were recorded on April 8, 1953, within the deed for Lots 1 to 5 of Block F (located

on the south and southwestern adjacent sites) of all “uranium, thorium, and all other material determined to be essential to the production of fissionable material to the United States of America, together with the right of the U.S. of A. to enter upon said land and prospect, mine, and remove the same with further provisions if the property is mined by the owner and relating to the National Security Cause”. The reservations, exceptions, and provisions are a result of the adjacent site historically being utilized by the U.S. Government for production of war related products. All reviewed historical information indicates that adjacent Former Ingersoll Site operations and concurrent operations on the Property, were primarily metal machining, the manufacture of only the structural components for the atomic industry, and the production of machines for war-related products during World War II and the post-war era. Furthermore, Kelly Graham, a Radioactive Materials Specialist with the Illinois Emergency Management Agency (IEMA), conducted a survey of the 301 South Water Street site for areas exhibiting elevated levels of radiation during the initial assessment activities at that site. The inspection was a result of a historical electron accelerator located in an underground structure of Building 2 and operated by Midwest Irradiation Center from the late 1950 until the early 1970s. The survey identified no surface areas of the western adjacent site to exhibit significantly elevated levels of radiation. In addition, findings on the Property identified the manufacture of nuclear structure components on the Property. The use of actual radioactive materials did not occur on the Property. Based on the information provided, this site should not present a readily apparent environmental concern in connection with the Property; therefore, this site should not present a REC in connection with the Property.

The Property has been utilized for industrial/manufacturing purposes since approximately 1876, with the initial development of the Rockford Watch Company. Manufacturing has also occurred on the Property during the Board of Education’s tenure, and while occupied by WF & John Barnes, Babcock & Wilcox, and Ingersoll Milling Machine Company. Historical records identified machine shop operations, plating, polishing, printing, welding, foundry operations, and oil storage as located on the Property during this time. Manufacturing operations are still conducted in the basement level of the Property building. Current on-site operations include painting, cutting, solvent use, and machining. A spray paint area was observed in the southwest section of the facility. Superficial floor staining was observed throughout the shop area and some basement areas. Oil stained woodblock flooring was observed in several areas

of the basement. It was typical for industrial facilities to install this type of flooring in order to soak up oils and fluids released from machining operations. Concrete floors were located below the wood block; however, the integrity of the concrete could not be verified throughout the basement. Additional chemical storage and small-scale releases that were contained by the building's concrete floor were observed during the site reconnaissance. Industrial operations cause a negative environmental impact to subsurface soil and groundwater. Therefore, the historical and on-going machine shop operations is considered a REC in connection with the Property.

An oil house is depicted on the south section of the Property from approximately 1887 to 1897, on the south side of the vacated Grove Street. An incinerator is also depicted in this area in 1994 while the Property was utilized by Ingersoll International. Both of these types of exterior fuel storage and burning can result in negative environmental impacts to subsoil and groundwater. The historical use of these items presents a REC in connection with the Property.

Historical 1994 records from Ingersoll International Rockford, IL (Ingersoll) depicted two (2) 15,000-gallon fuel oil tanks near the north section of the Property, in the area of the vacated Oak Street. The tanks are associated with a boiler house constructed in approximately 1976 and demolished in 1998. The tanks were removed in December 1997 and listed as OSFM tanks 6 and 7. Historical records from Ingersoll International Rockford, IL also indicate two (2) 1,000-gallon acetone tanks at the north end of the assembly bay, near the northwest loading dock as removed in December 1997. The OSFM tank numbers are listed as 5 and 9. All of the tanks are estimated to have been used from approximately 1970 - 1980. An UST Removal log indicates four (4) USTs were removed while an OSFM fire marshal was on-site. The removal log indicates that the USTs did not leak. A tank removal report with confirmation soil sampling was prepared for Ingersoll and reviewed by a prior consultant. No elevated levels of contaminants were found. As a result, the use of the four (4) on-site USTs is considered a Historical REC (HREC) and not a current REC in connection with the Property.

Piles of soil mixed with general demolition debris are present and intermixed with overgrown vegetation on the southwestern perimeter of the Property. As the fill piles are adjacent to the railroad track, they may originate from the retaining wall construction that runs along the

Property's southwest perimeter along the rail track. No information was obtained as to what material(s) were used for the filling activities. The fill may originate from off-site and/or contaminated sources. The unknown fill materials used on the southwest section of the Property presents a REC in connection with the Property.

Oily staining and oily metal debris were observed on the permeable soil ground surface in the exterior waste storage area, located south of the building's southwest corner. Scrap metal generated from machining operations contains residual amounts of oils, coolants, and solvents. The direct contact of these contaminants to the Property's subsoil and storm water presents a REC in connection with the Property.

Several large, overhead-mounted electrical transformers were observed along the west exterior wall of the Property building. The transformers appeared in fair condition. The mineral oil within historical electrical transformers had the potential to contain polychlorinated biphenyls (PCBs). It is unknown if the current transformers, or any predecessors, contain PCBs. However, the potential long-term use of large industrial transformers at this location presents a REC in connection with the Property.

A total of four (4) elevators were historically used within the Property building. Two (2) passenger elevators are cable-driven; the freight elevators are reportedly hydraulic. Based on the age of the freight elevator systems, the hydraulic oil may contain PCBs and, if an in-ground cylinder is utilized, the elevator may be a direct route of leaking hydraulic fluid to the Property subsurface. The long-term use of hydraulic elevators within the building presents a REC in connection with the Property.

A grated exterior storm water drain was observed at the exterior at-grade loading dock on the northwest corner of the Property building during site reconnaissance activities. It is unknown where the storm water drained. The drain was in good condition during site reconnaissance. The drain is considered a *de minimis condition* and not considered a REC.

Fire records indicated a temporary diesel AST was permitted at the *property* for 60 days in 1981 to fuel a generator during temporary construction activities. The location of the AST is

unknown; it may have been actually located down-gradient of the Property, on the west adjacent site. As the duration of AST use was short, the temporary use of the diesel AST is considered a *de minimis condition* and is not a REC.

Several limitations were encountered during the completion of the Phase I ESA. These limitations, with the exception of the one detailed below, are not considered significant data gaps as they did not impede the identification of additional RECs to the Property. The following significant data gap was encountered during the completion of this Phase I ESA: an unidentified pipe, resembling a chimney or possible UST system vent pipe, was observed along the structure's southeast wall near the front, or east section of the building. The data gap is deemed significant as it has the potential to lead to the identification of additional RECs on the Property. Further investigation may be prudent to determine the origin of this pipe.

Multiple attempts were made to re-interview the owner of the Property. At the time of this report, a response has not been provided. However, as a previous questionnaire was provided by the owner several months prior and as there has been no changes in tenants or building features, based on the historical use of the Property, as determined from the historical information obtained, it is unlikely that additional RECs would be identified if made available. As a result, this data gap is not considered significant.

In the opinion of Fehr Graham, confirmation sampling of soils, soil gas and/or groundwater are recommended to confirm or refute the presence of hazardous substances and/or petroleum products associated with the aforementioned RECs.